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Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the

application:

Listing of Claims:

Claims 1-28 (canceled)

29. (Currently Amended) A method for determining one or more kinetic parameters of

binding between a first binding member and a second binding member comprising:

(a) simultaneously adsorbing the first binding member to a surface at a plurality of

microspots;

(b) simultaneously presenting the second binding member to the first binding

member at each of the microspots, there being a plurality of combinations of first binding

member surface density and second binding member concentration among the plurality of

microspots;

(c) simultaneously obtaining data indicative of a binding reaction between the first

and second binding members at each of the plurality of microspots by a biosensor

detection method; and

(d) simultaneously obtaining reference data from a plurality of interspots located at

a surface between the at least two or more microspots; and

(d)(e) processing the data so as to obtain one or more kinetic parameters of binding

between the first and second binding members;

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wherein the plurality of bindings carried out does not necessitate a regeneration step and wherein in step (a) adsorbing the first binding member to a surface at a plurality of microspots comprises:

- (a) activating the surface in the microspot by presenting thereto a chemical activating substance by:
 - (i) forming a first channel around a region containing the microspot:
- (ii) introducing a solution containing the activating substance into the channel; and
 - (iii) removing excess activating solution from the channel;
 - (b) adsorbing the first binding member to the microspot; and
 - (c) deactivating the microspot.
- 30. (Currently Amended) The method according to claim Claim 29 wherein the biosensor detection method is selected from surface plasmon resonance (SPR), critical angle refractometry, total internal fluorescence (TIRF), total internal reflection phosphorescence, total internal reflection light scattering, evanescent wave elipsometry, and Brewster angle reflectometry.
- 31. (Currently Amended) The method according to claim Claim 29, wherein the detection method is SPR and the data indicative of a binding reaction between the first and second binding members at each of the plurality of microspots is an SPR parameter selected from the SPR resonance angle, resonance wavelength, reflectance changes, and phase changes.

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32. (Currently Amended) The method according to claim Claim 29, wherein the one or

more kinetic parameters are selected from an association constant Ka, a dissociation

constant K_d and an affinity constant.

33. (Currently Amended) The method according to claim Claim 29, wherein the step of

adsorption to the microspot involves:

(a) forming a channel around a region containing the microspot;

(b) introducing a solution containing the molecular species into the channel; and

(c) removing excess solution from the channel.

34. (Currently Amended) The method according to claim Claim 29, wherein the step of

activating the surface of the microspot involves producing an electric field over the

microspot.

35. (Currently Amended) The method according to claim Claim 29 further comprising:

(a) deactivating portions of the surface not included in a microspot;

(b) forming one or more second channels perpendicular to one or more of the first

channels; and

(c) for each second channel, introducing into the second channel a second binding

member.

- 36. (Previously Presented) The method according to any one of the previous claims further comprising obtaining reference data from a region of the surface not included in a microspot.
- 37. (Currently Amended) A method for localizing a molecular species at each of two or more microspots on a surface, comprising, for each of one or more localization regions:
 - (a) activating the microspot surface in the localization region; by:
 - (i) forming a first channel around the region containing the microspot;
- (ii) introducing a solution containing an activating substance into the channel; and
 - (iii) removing excess activating solution from the channel;
- (b) for each of one or more microspots in the localization region, simultaneously adsorbing a molecular species to each of the two or more microspots by:
- (i) forming at least two further channels, each being perpendicular to the first channel;
- (ii) simultaneously introducing a solution containing the molecular species into the channel; and
 - (c) optionally deactivating the localization region microspot,

wherein the molecular species localized on the two or more microspots may be the same in each of the microspots or different in each of the microspots, and wherein the molecular species may be adsorbed at identical or different surface densities to each of the microspots.

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38. (Cancelled)

39. (Currently Amended) The method according to claim Claim 37, wherein the step of

activating the microspot involves producing an electric field over the microspot.

40. (Cancelled)

41. (Currently Amended) The method according to claim Claim 40 37 wherein at least one

of the molecular species is a first binding member and the method further comprises:

(a) deactivating portions of the surface not included in a localization region;

(b) (a) forming one or more second channels in a region containing the microspots;

(b) for each second one of the channels channel, introducing a second binding

member; and

(c) simultaneously obtaining data indicative of a binding reaction between the first

and second binding members at each of the two or more microspots by a biosensor

detection method.

42. (Currently Amended) A probe array produced by the method of any one of Claims

<u>claim</u> 37.

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43. (Currently Amended) The method according to claim Claim 30, wherein the detection

method is SPR and the data indicative of a binding reaction between the first and second

binding members at each of the plurality of microspots is an SPR parameter selected from

the SPR resonance angle, resonance wavelength, reflectance changes, and phase

changes.

44. (Currently Amended) The method according to claim Claim 30, wherein the one or

more kinetic parameters are selected from an association constant Ka, a dissociation

constant K_d and an affinity constant.

45. (Currently Amended) The method according to claim Claim 31, wherein the one or

more kinetic parameters are selected from an association constant $K_{\!a_{\!a}}$ a dissociation

constant K_d and an affinity constant.

46. (Currently Amended) A probe array produced by the method of any-one-of-Claims

<u>claim</u> 41.